



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

TEN LOPHOZIAS.

From "Notes on New England Hepaticae."

DR. A. W. EVANS IN RHODORA.

Selected and Illustrated by Caroline Coventry Haynes.
[By permission.]

"LOPHOZIA FLOERKII (Web. & Mohr) Schiffn.; Engler & Prantl, Nat. Pflanzenfam. 1³: 85. 1893. *Jungermannia Floerkii* Web. & Mohr, Bot. Taschenb. 410. 1807. *J. Naumannii* Nees; Martius, Fl. Crypt. Erlang. 143. *pl.* 4, f. 16. 1817. *J. barbata*, var. *Floerkii* Nees, Naturgeschichte der europ. Lebermoose, 2: 168. 1836. *J. lycopodioides* var. *Floerkii* Lindb. Musc. Scand. 7. 1879. Mt. Washington, New Hampshire (*W. G. Farlow, A. W. E.*)" Evans, Rhodora 4: 210, 1902,

Plate II. Figs. 1-4. 1—Male plant $\times 22$. 2—Plant, ventral view showing conspicuous underleaves, $\times 22$. 3—Leaf, dorsal view $\times 70$. 4—Leaf cells $\times 365$. Drawn from material collected by Mr. A. Grape in Sweden. Sulliv. Moss Chapter Herb.

"LOPHOZIA LYCOPODIODES (Wallr.) Cogn. Bull. Soc. roy. Bot. de Belgique 10: 278. 1872. *Jungermannia lycopodioides* Wallr. Fl. Crypt. Germ. 1: 76. 1831. *J. barbata*, var. *lycopodioides* Nees, Naturgeschichte der europ. Lebermoose, 2: 185. 1836. Mt. Katahdin, Maine (*J. F. Collins*); Thorn Mt. and Carter Dome, New Hampshire (*A. W. E.*)" Evans, Rhodora 4: 210, 1902.

Figs. 5-7. 5—Plant, ventral view showing fine cilia at base of leaves $\times 22$. 6—Plant showing perianth, ventral view $\times 22$. 7—Leaf cells $\times 365$. Drawn from material collected by Underwood and Selby, near Ouray, Colorado, Sept. 9, 1901, New York Bot. Garden Herbarium.

"LOPHOZIA LYONI (Tayl.) Steph. Bull. de l'Herb. Boissier, II. 2: 157. 1902. *Jungermannia quinquedentata* Huds. Fl. Angl. 511. 1762? Web. & Mohr, Bot. Taschenb. 430. 1807? *J. barbata*, var. *quinquedentata* Nees, Naturgeschichte der europ. Lebermoose, 2: 196. 1836. *J. Lyoni* Tayl. Trans. Bot. Soc. Edinburg, 1: 116, *pl.* 7. 1844. *Lophozia quinquedentata* Cogn. Bull. Soc. roy. Bot. de Belgique, 10: 279. 1872. Mt. Kineo, Moosehead Lake, Maine, (*M. L. Fernald*); Jackson, New Hampshire (*A. W. E.*); Mt. Mansfield, Vermont (*W. G. Farlow*); Meriden, Connecticut (*A. W. E.*)" Evans, Rhodora 4: 210, 1902.

Figs. 8-11. 8—Plant, showing perianth $\times 22$. 9—Male plant, dorsal view $\times 22$. 10—Leaf, dorsal view $\times 70$. 11—Leaf cells $\times 365$. Drawn from No. 185 Hep. Amer. collected by Dr. A. W. Evans, Jackson Spr., N. H., under name *Jungermannia quinquedentata* Huds.

"The three species just quoted together with *L. gracilis* (Schleich.) Steph. (= *Jungermannia barbata*, var. *attenuata* Mart. of the Manual) have sometimes been regarded as distinct species, sometimes as well marked varieties of *L. barbata* (Schreb.) Dumort. Nearly all recent writers hold to the former view, recognizing five northern species in the "*barbata*"—group, but Pearson recognizes only four species looking upon *L. Floerkii* as a variety of *L. lycopodioides*, an opinion which has the sanction of Lindberg. With a little

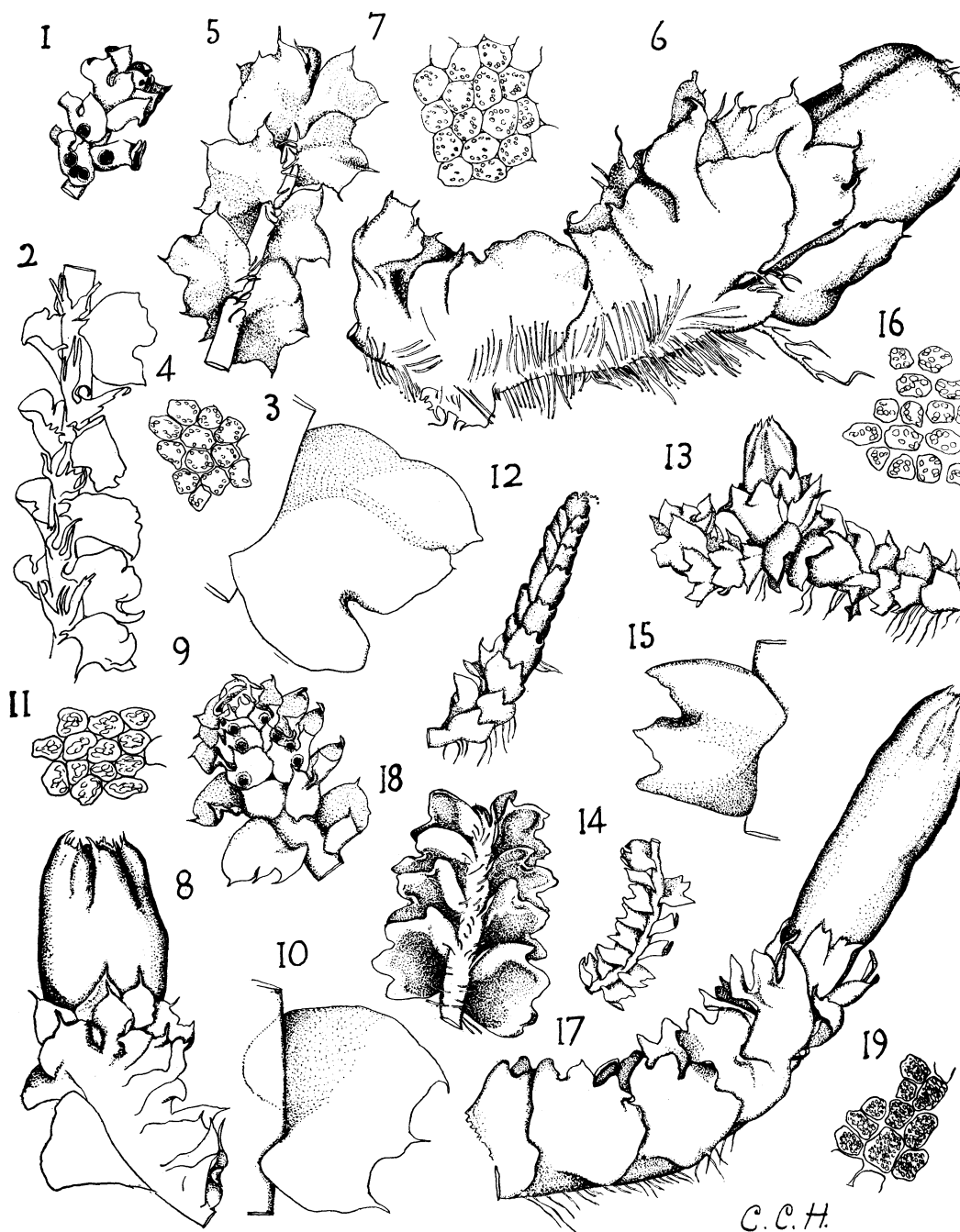
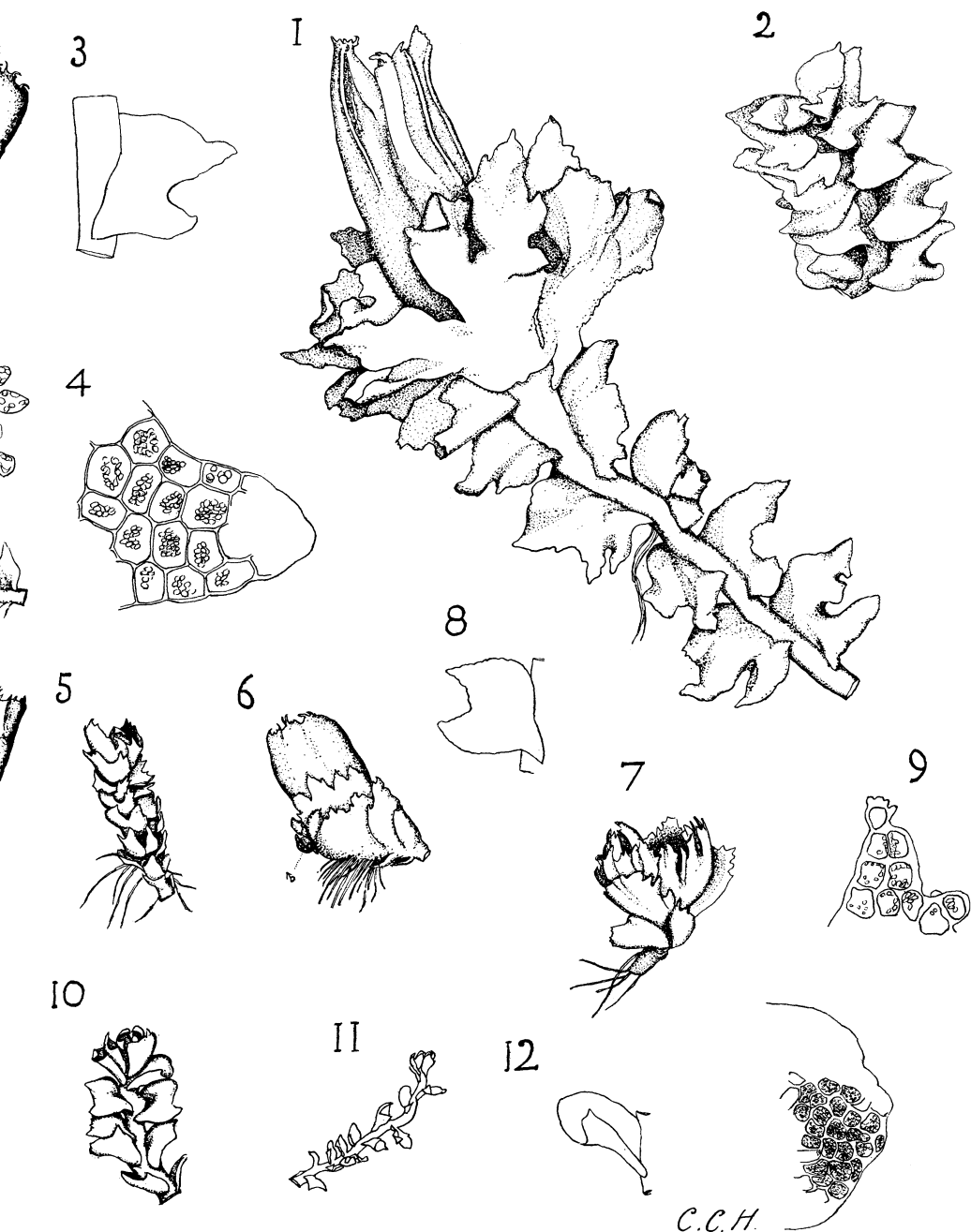


PLATE II. Lophozias. All reduced $\frac{1}{2}$.



C.C.H.

PLATE III. Reproduction Plate IX, Bry. Nov. 1906. Mag.=PLATE II.

care it is not difficult to distinguish these five species, and, with the exception of *L. Floerkii* and *L. lycopodioides*, they show no tendency to vary into one another. *L. gracilis* is not uncommon in mountainous regions and is the smallest species of the group. It may usually be recognized at a glance by its upright flagelliform branches which bear gemmae near the apex and closely appressed leaves in the lower part. These branches, which are similar in appearance to the gemmiparous branches of *Odontoschisma denudatum* and *Kantia Trichomanis* are sometimes very abundant, covering over an entire tuft of the plant, but sometimes they are very sparingly produced.

Of the other four species *L. barbata* and *L. Lyoni* agree with each other in having inconspicuous or obsolete underleaves and in lacking marginal appendages of any sort near the postical bases of the leaves, while *L. Floerkii* and *L. lycopodioides* agree in having large and conspicuous bifid underleaves and in developing clusters of slender branched cilia near the postical leaf-bases. *L. barbata* is rather more robust than *L. Lyoni*, but the most reliable differential characters are drawn from the leaves. In *L. barbata* these have their antical and postical margins of about the same length and approximately parallel, while the teeth at the truncate apex are three or four in number, subequal in size and obtusely or subacutely pointed. If we should pass a straight line through these teeth, it would lie parallel or nearly so with the axis of the stem. In the leaves of *L. Lyoni* the postical margin is strongly curved and is much longer than the antical, the sharply pointed teeth are commonly three in number and the postical tooth is considerably larger than the others. If we should pass a straight line through these teeth, it would form an acute angle with the axis. *Lophozia Lyoni* is commonly known as *L. quinquedentata*, but there is so much doubt as to what the original *Jungermannia quinquedentata* really was that it seems best to discard the name altogether, as both Pearson and Stephani have recently done, and to take up the later name of Taylor, about which their is no doubt whatever.

The differences between *L. lycopodioides* and *L. Floerkii* are those of degree rather than kind. *L. lycopodioides* is the more robust of the two, its leaves are larger and more crispate, the teeth are often mucronate instead of being bluntly pointed, the basal cilia are more abundant and more finely divided and the divisions of the underleaves are more conspicuously ciliate. Typical specimens can be distinguished from each other at a glance, but one occasionally meets with forms which are difficult to refer definitely to either species and which apparently represent intermediate forms. As has already been noted both species are almost universally recognized in spite of this fact." Evans, *Rhodora* 4: 210, 211, 1902.

Figs. 12-16 *Lophozia gracilis*. 12.—Gemmiparous plant $\times 22$. 13.—Plant showing perianth $\times 22$. 14.—Plant, dorsal view $\times 22$. 15.—Leaf, dorsal view $\times 70$. 16.—Leaf cells $\times 365$. Drawn from 48 Hep. Bor. Am. New York Bot. Garden Herb., and from material collected by C. C. Haynes, Adir. Mts., May 31, 1904.

Figs. 17-19 *Lophozia barbata*. 17.—Plant showing perianth $\times 22$. 18.—Plant, ventral view $\times 22$. 19.—Leaf cells $\times 365$. Drawn from material collected by Mrs. L. A. Carter at Laconia, N. H., May, 1905, and Mr. H. Dupret, near Montreal, Canada.

New York City.

(To be Continued)